THE CRITICAL ROLE OF TRADE AND INDUSTRIAL STATISTICS IN POLICY FORMULATION

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I. INTRODUCTION

Recent developments in Philippine trade and industrial policy present a major challenge to the statistical agencies — a challenge that is filled with difficulties as well as opportunities. In the last two years, the government has undertaken major policy decisions in the field of tariffs, commodity import procedures, investment and export incentives and other complementary measures aimed at achieving a dynamic industrial structure which is both efficient and internationally competitive. Increased foreign exchange earnings and higher employment generation have likewise been identified as primary objectives of this new industrial restructuring package, along with the equitable dispersal of the benefits of industrialization among the various sectors of the population.

In this new setting, the statistical agencies are now tasked with the expanded responsibility of providing policymakers with sound information which may be used not only to evaluate existing programs but also to help determine future policy directions. Data gathering, analysis and presentation shall no longer be limited to historical trends but will, more importantly, consider what could possibly take place in the light of certain specified policy mixes. Considering that the new industrialization strategy spans various sectors of the economy, it is essential that information processing take on an integratred approach, without necessarily losing touch with the basic nature of each type of data. The continued cooperation between users and producers of information from both the government and the private sector cannot be overemphasized in the development of an effective/relevant information system on Philippine trade and industry for use in the assessment of various programs and policies.

II. ELEMENTS OF THE INDUSTRIAL RESTRUCTURING PROGRAM AND EXPORT DRIVE

As envisioned, the industrialization strategy currently being

Commissioner, Philippine Tariff Commission. Paper presented at the Third National Convention on Statistics, 13-14 December 1982, Philippine International Convention Center, Manila.

implemented consists of several interrelated components. In the area of tariffs, the most significant development was the adoption of the Tariff Reform Program which was to gradually reduce tariff rates from an average level of 43 percent in 1979 to 28 percent over a five-year period. On the whole, protection to industries via the tariff system will be at much lower levels than they have ever been since the early 1960's. There will also be less dispersion in the levels of protection among the various subsectors, resulting in the evening out of the system of tariff protection. All these moves are aimed to encourage greater domestic efficiency in manufacturing and to induce the growth of exports.

Side by side with this Tariff Reform Program is the phased plan for the liberalization of commodity imports which gradually relaxes import regulations on selected items classified as nonessential and unclassified consumer goods (NEC and UC) under the Philippine Standard Commodity Classification Code (PSCC). Certain items which were not allowed to be imported two years ago may now be freely imported, subject to the relevant taxes and duties.

This program is taking place simultaneously with a concerted effort on the part of government to identify areas of comparative advantage in which resources will be encouraged to flow in the future. Specifically, this involves the initiation of sector programs to identify sectors with export growth potential.

To provide the foreign exchange requirements for an industrializing economy and the growing population, the Ministry of Trade and Industry has laid increasing emphasis on export promotion and development. Seven product categories have been identified as the core of the export development program:

(1) handicrafts (gifts and housewares)
(2) leather goods and footwear
(3) furniture and woodworks
(4) electronics
(5) garments
(6) overseas construction services
(7) fresh and processed food

These products/services have been chosen on the basis of their perceived comparative advantage, mainly because of low cost and adequate supply of raw materials and/or cheap labor costs.

III. DATA REQUIREMENTS OF THE PROGRAM

To ensure the success of the renewed thrust for an efficient industrial structure and export drive, it is imperative that the data requirements for its close monitoring and assessment be ensured also.

It is essential that government agencies and decision-makers in the private sector – prospective investors, entrepreneurs, managers, and bankers – who determine the future course of manufacturing activity in the Philippines have full access to the best possible, most timely and accurate information regarding trade and industry developments so as to arrive at a full understanding of their likely implications on future investments and on the whole economy.

All the specific sector studies mentioned earlier, as well as the assessment of the effectiveness of the industrial reform program, have something in common with respect to their data requirements, namely, the need for a reliable set of sufficiently disaggregated data, available on a reasonably up-to-date basis, to facilitate the monitoring of developments and to assist in the formulation of future policies. Unfortunately, this basic requirement is not being adequately met. A recent study on the state of industrial statistics in the Philippines strongly recommended that the government address the problem of improving the data base on industrial statistics. The highest priority was indicated for the development of a comprehensive work program in relation to the whole statistical system which takes into account the priorities and needs of the major users of industrial statistics.

To be more specific, allow me to point out the more urgent data needs based on our own experience in the tariff reform program.

Firstly, there is a pressing need for an updated Input-Output table which adequately reflects current patterns of production and interindustry transfers. Since the release of the 1974 Inter-Industry Transactions Table, there have been two major oil shocks with consequent repercussions on the world prices of commodities. Since value added is highly sensitive to prices and trading conditions, these price changes could alter the proportion of value added to total output substantially. Within the same time span, a number of industries have emerged in the export sector, such as the garments, electronics and processed food industries. The requirements of these industries may not be adequately reflected in the early

surveys made for the 1974 I-O table; hence, there is sufficient ground to expect that these conditions may have substantially affected the reliability of the technical coefficients still in use.

The continued reliance on the 1974 table in drawing up medium- and long-term development plans or in estimating the effects of policy reforms such as the industrial restructuring program is open to dangers of under- or overestimation of expected results and implications on the rest of the economy. It is suggested that this problem be addressed squarely in concert with all agencies which have a stake in monitoring developments in industry and trade.

IV. INCENTIVES AND COMPARATIVE ADVANTAGE INDICATORS

In attempting to assess the effectiveness of the industrial reform program, a number of measures, sometimes referred to as efficiency indicators, are currently being studied. These include: (1) effective rate of protection (EPR), and (2) domestic recource cost (DR). In addition, the Tariff Commission is looking at Net Subsidy Equivalents (NSE) and the Gross Subsidy Equivalents (GSE), as well as the Consumer Tax Equivalents (CTE), as complementary indicators of resource transfers. I shall discuss each one briefly, indicating the data requirements for each.

Effective Rate of Protection

Effective protection estimates are used to quantify the net incentive effects on industries of the combined use of import tariff duties, quotas, export taxes and all other government measures affecting the profitability of various areas of investment. The concept of the effective rate of protection has been widely accepted as an indicator of the relative levels of encouragement to various industries afforded by the government through the use of the above-mentioned policy instruments. It is useful (a) in estimating how much government protection (and/or subsidies) each industry receives; (b) as a guide in tariff and structural reform programs; and (c) in giving a preliminary indication of the relative efficiency of various industries.

EPR estimates can be done at varying levels of disaggregation from one based on firm level data to one based on broad industry categories as set out in an Input-Output table.

The basic concept is the measurement of protection in relation to world prices at the border. Taking account of the import duties and other taxes affecting all major inputs as well as output of the industry, the cost of domestic processing or manufacturing is compared with the price at which the same activity can be pursued in the world market. It may therefore be viewed as a measure of the international competitiveness of domestic manufacturing.

The basic formula for effective protection can be shown as:

$$\text{Effective protection to } X = \frac{\text{Value added at domestic prices} - \text{Value added at world prices}}{\text{Value added at world prices}} \times \frac{100}{1}$$

or as a coefficient

$$EPR = \frac{VA_d - VA_w}{VA_w} = \frac{VA_{d-1}}{VA_w}$$

EPR = effective protective rate

VA_d = value added in domestic prices

VA_w = value added in world prices

Data Requirements for EPR

Depending on the level of aggregation, the basic data requirements per industry for a particular year include:

(a) Value of output (i) sold domestically and (ii) exported. Both are broken down as far as possible into products to which different import duties apply (e.g., textiles into thread, grey cloth, printed and dyed products, pure cotton and synthetic blends, etc.).

(b) Import duties and other taxes applying to each product.

(c) Price comparisons (c.i.f. or f.o.b. versus domestic) when protection is given by quotas or other nontariff means rather than by tariffs.

(d) For each industry, value of main material inputs (imported or supplied domestically) and corresponding nominal protection (based on nominal import duties or price comparisons).

(e) Value of nontradable inputs (e.g., electricity, internal transport, repairs and maintenance, water, building rental, insurance, advertising, legal services) broken down into value added, tradable

inputs in border prices, and import duty and other taxes.

It is not my intention here to discuss the intricacies and complexities of the estimation of EPRs. We cordially invite anyone who has an interest in this matter to visit the Tariff Commission at its office in the Philippine Heart Center to discuss the methodology and the limitations in the use of the EPR.

I would like to take this opportunity, however, to caution you on the use of the EPR measure. No simple conclusion as to whether or not protection is too high or too low should be expected from the measurement of the effective rate of protection.

Firstly, it should be recognized that the EPR is a price measure; hence, it is influenced not only by the tariff but also by any measure which enables a local producer to increase his price in the domestic market. Examples of such measures are quotas, price controls, progressive local content programs, import licensing, and a host of other nontariff measures. The effect of the existence of such measures is generally to increase the EPRs.

Secondly, the EPR is a static measure. As in all static measures, care must be exercised in interpreting results based on observations at one point in time. For instance, during times of lower economic activity or where the industry is under sustained market pressures, the effects could be reflected in increased levels of EPR compared to observations made during normal times.

Finally, the EPR is based on some basic assumptions, namely: (1) that the domestic market is perfectly competitive; (2) that the product is homogeneous with the imported counterpart; (3) that there is no preference for the imported product; (4) that the technical coefficients are fixed; and (5) that the supply of the imported product is infinitely elastic. It is easy to see that the market conditions in the Philippines depart from these assumptions in one way or another.

Despite these limitations, the EPR measurement is useful in providing a broad indicator of areas which attract more resources and, therefore, in indicating pressures for misallocation of resources. Studies conducted on the structure of protection in the Philippines indicated three elements of bias in the effective protection structure based on tariffs and indirect taxes from 1965 to 1974: (1) the bias in favor of manufacturing over other sectors; (2) the penalty imposed on exports both in manufacturing and nonmanufacturing industries; and (3) the bias in favor of the finishing stages of pro-

ducing consumption goods over intermediate and, especially, capital goods (Bautista, Power and Associates 1979).

Domestic Resource Cost (DRC)

The DRC measure is essentially a cost-benefit ratio, and it indicates the amount of domestic resources used per unit of foreign exchange earned or saved from the production of a tradable good. An industry's DRC may be presented by the ratio of total domestic cost, evaluated at social opportunity cost, to the net foreign exchange earned or saved. Thus:

$$DRC = \frac{\text{domestic cost per unit of product}}{\text{world price} - \text{foreign cost per unit}}$$

The numerator is expressed in local currency, the denominator in foreign currency. World price is f.o.b. for exports and c.i.f. for imports.

In static equilibrium, efficient resource allocation would equate the DRCs of all industries, which should equal the shadow price of foreign exchange (Krueger 1972). This is hardly ever the case in observations of DRC estimates due to changing parameters and imperfections in empirical measurements (Bautista, Power and Associates 1979). However, as in EPR measures, DRC studies are useful in identifying areas which may be drawing resources away from the relatively more efficient industries.

Data Requirements for DRC

As with EPR, estimation of DRCs can be done at varying levels of disaggregation. One could use Input-Output data but would need to deflate the terms in the DRC formula by the value of sectoral output, or use firm level data.

The data requirements for DRC estimates are closely related to those in EPR studies. In addition, however, one needs to obtain costs of capital and labor (estimated at shadow prices) to compute the domestic cost per unit of product. This entails devoting a good deal of effort in estimating the appropriate shadow price of land, labor and the foreign exchange rate, and the opportunity cost of capital.

Net and Gross Subsidy Equivalents and Consumer Tax Equivalent

Empirical studies in other countries which have undertaken EPR estimates indicate that there are limitations on relying solely on the results of EPR measurements in policy review and formulation. The value of a general equilibrium approach in policy formulation is well recognized. Unfortunately, however, this facility is not presently available in the Philippines, although some efforts have been directed to it in the past.

In trying to improve the industry policy mix in the Philippines, it is useful to explore other measures of efficiency which may be available to supplement EPRs and DRCs. For instance, it is possible to generate information on the extent of the transfer of resources involved in imposing tariffs on a particular industry or product group from readily available information. These measures are:

(1) The gross subsidy equivalent
(2) The net subsidy equivalent
(3) The consumer tax equivalent.

The subsidy equivalents are the costs which would be increased if, instead of a tariff, a direct cash subsidy to the industry were used to generate the same production responses. The *Gross Subsidy Equivalent* (GSE) is the quantum measure of the nominal tariff on the final good. It represents the cash equivalent of the nominal tariff on output of a domestic industry. The *Net Subsidy Equivalent* (NSE) is the quantum measure for the effective rate of protection. It is net of the tax effect of protection on inputs which gives an indication of "subsidy" to value added. In other words, it is the cash value of the EPR.

The Consumer Tax Equivalent (CTE) is an estimate of the total cost of the tariff to the consumer both in respect of protection to domestic industry and as a consequence of tariffs and taxes on imported inputs.

In addition, the summation of NSEs could provide an indication of the overall transfers in value added implicit in the existing tariff structure. Because value added is discrete for each industry, the NSE is an additive measure.

Data Requirements for Subsidy Equivalents

The estimation of the subsidy equivalents utilizes the same data

sources as EPR and DRC calculations. Due to the lack of firm level data, the Tariff Commission has utilized NCSO's 237 x 237 Input-Output table for 1974. For the estimates of nominal tariffs and EPRs, we have relied on the earlier studies on the EPRs made under the Industrial Promotion Policies Project and subsequent studies made at the Tariff Commission based on the new tariff rates under the Tariff Reform Program.

All these calculations are therefore subject to the limitations and reservations expressed earlier on the use of the 1974 I-O table for present day estimates of the implications of the change in tariffs using 1973-74 interindustry relationships.

Preliminary studies at the Tariff Commission indicate that the overall transfers (based on aggregate NSEs) appear to be of the order of 10 percent of Gross Domestic Product in 1974, or roughly ₱10 billion. The magnitude of these transfers warrants careful consideration by the government. Attention is clearly needed to ensure that the tax effect implicit in these transfers is consistent with the government's overall economic objectives.

V. NEED TO SUPPORT STATISTICAL ACTIVITIES

The National Census and Statistics Office has been doing a heroic job despite limited resources, with a budget that has not kept pace with the escalating costs of information gathering, storage and dissemination. The deficiencies that have been identified in the statistical system are attributable in almost all cases to insufficient funds.

Notwithstanding the existing policy designating the NCSO as the central and lead agency for statistical matters, costly and ineffective information gathering and processing is still being carried out separately by various government agencies in order to generate information required for their individual policy development programs.

Problems of coordination of information collection activities have consequently arisen with such fragmented data gathering activities. This lack of coordination has likewise resulted in costly duplication of requests to the private sector to provide information to the government. And the multiple requests to respondents for the same data have been a source of annoyance for them, and have contributed to the low response rates to the surveys. They have also led to incompatibilities between data collections which can reduce their

usefulness and seriously undermine their credibility. Some statistical data have also been developed in incompatible frameworks, although these are now being resolved progressively through the efforts of the Statistical Advisory Board.

Besides the problems in incompatibilities in the system, the problem of gaps in information coverage deserves equal attention. There is substantial scope for narrowing these gaps and improving the quality of statistical information such as detailed commodity information, industry structure, output and employment.

VI. ROLE OF STATISTICS IN TRADE NEGOTIATIONS

The increasing involvement of the Philippines in trade and tariff negotiations aimed at improving market access for Philippine export products necessitates ready access to highly disagregated commodity trade information, including analyses of trade flows. There is general agreement among users that the data on foreign trade are of high quality. However, the recent accession of the Philippines to the General Agreement on Tariffs and Trade (GATT) as well as the increasing tempo of trade and economic cooperation in the ASEAN region have imposed additional burdens on the Foreign Trade Division of theNCSO. On top of these, the specialized requirements for annual reviews of international agreements such as the Multifiber Agreement (MFA) covering exportation of garments and textiles and of the Generalized System of Preferences (GSP) under the UNCTAD necessitate the compilation of information which is not readily obtainable under the present format of trade statistics. This is a clear area for further cooperation between user agencies and the statistical institutions.

In the field of foreign trade statistics, this cooperation should include discussions on the specifications of items for breakdown, the levels of disaggregation required, and the preferred frequency/timing of reports. It is to be expected that the response to the above specifications would depend on the individual user; but given the desired specifications, the NCSO could evaluate the necessity of developing supplemental programs for these specialized requirements.

As a final note, it is suggested that in areas which call for intercountry comparisons, the statistical system should strive to compile national statistics based on internationally accepted definitions and formats. This implies the allocation of resources to ensure the

continuous updating of national coding systems.

The solutions to problems in related areas of policy such as trade, industry and employment, would be more easily coordinated if the information systems which support them are based on data concepts, definitions, classifications and reporting formats that are compatible. If information systems are not compatible, then data cannot be consolidated on a valid basis to study interrelated policy issues, and increasing reliance has to be placed on individual judgments of various users. The maintenance of updated standard data concepts, together with standard industry and commodity classifications and a uniform system of defining reporting units, provides the nucleus of a fully integrated information system which is ideally suited to the development of an economywide analytical framework or economic model which systematically takes into account the interdependencies within the broad realms of government concern.

VII. STATISTICS FOR FORWARD PLANNING

It has already been noted that the quality of policy advice depends vitally on the quality of data that serve as inputs to the policy studies. Possibly the most difficult aspect of this data problem is the absence of a comprehensive economywide analytical framework upon which meaningful forecasts of future developments may be based in the use of an *ex ante* evaluation of policy options. Such a framework would improve the consistency of policy advice by facilitating the coordination of policies in light of the dynamic interrelationship between various sectors such as trade, industry and employment — all of which are relevant in managing structural change. Government agencies need advice which would enable them to respond not only to the visible short-term economic and social problems but also to the long-term implications of the proposed solutions to these immediate and pressing problems. In the absence of the economywide framework or model, there is the danger that the ad hoc policy responses of government may turn out to be the new problems of tomorrow.

An appropriately designed economywide analytical framework would enable policymakers to adopt more flexible and coordinated policies that would facilitate structural adjustments in such a way that any undue disruptions and social hardships within the com-

munity could be anticipated and, hopefully, minimized. An improvement of our understanding of the probable future impact of emerging economic changes, originating both here and abroad, which are discernible from established statistical trends or based on scenarios which embody the best available judgements about the future course of events, would provide a better perspective for the development of long-term policies and help reduce the need for undue government intervention. Note, however, that the proposed framework is intended to provide a better *perspective* for policy development rather than a *prescription* for policy action. It is meant as an aid to reaching the best informed judgment but not as a substitute for such judgement.

As practising statisticians, I am sure that you appreciate only too well that the future cannot be known with certainty. But this does not stop people from trying to foresee it; and responsible policymakers — who attempt to anticipate the possible effects of their proposals — must make judgements about what is likely to happen in the future. Foresight of this kind is greatly improved with the availability of a suitably designed model of the economy which, while not infallible, helps to focus attention on the likely future impact of emerging pressures on industries and avoids the kind of crises which can exacerbate the hardships associated with the structural reform program.

From the private sector viewpoint, it is equally important for forward looking information to be made available to it, so that private business could form opinions about future growth areas in the economy. If businessmen and investors are to adapt to change, they must be able to recognize future growth opportunities and must be assured of reasonable access to information needed to make their own independent assessments of the future environment in which they will be operating.

The openness with which policymakers interact with the private sector by sharing insights and their respective perceptions of the likely effect of policy decisions will help reduce biases against policy changes and improve the climate for public support for structural change.

In the Philippine setting, this reluctance to share information is not limited to the government sector; in fact, the difficulty of obtaining information from private manufacturing and trading firms is even more formidable than in the public sector. One of the areas which have been identified for priority attention in upgrading the

statistical system is the improvement in data-gathering mechanisms, including the pooling of resources by the government and private sector. A fairly significant amount of data are available as a by-product of administrative procedure. Examples of agencies regularly receiving valuable data are the Securities and Exchange Commission, The Board of Investments, The Ministry of Trade and Industry, and the Tariff Commission. Perhaps, as suggested in some quarters, the Statistical Advisory Board should place a high priority on developing a framework for greater utilization of administrative records.

In addition, it has also been suggested that the legislative framework for ensuring compliance with statistical reporting requirements be strengthened together with the capacity of the statistical agencies to enforce them. But more importantly, there is a need to win the support of the private sector through a determined effort to upgrade the quality of national statistics and a willingness to share the general findings of ongoing studies. This will be a positive contribution to the process of consultation and communication on industry and trade policies.

Summing Up

The move to strengthen the Philippines' economic statistics comes at a very opportune time when the Philippine government is implementing a major industrial restructuring program. In the Philippines today, a large number of separate Ministries are involved in activities which have an impact on industry and trade policy. Within this framework, each of the institutions has developed its own information system, analytical capabilities and peculiarities of approach. The adequacy of the analysis which supports policy-making is therefore likely to vary from one institution to another.

There is an apparent need for an integrated approach to the collection and analysis of information relating to trade and industry which will insure maximum coverage and minimize overlapping requests from the same sources.

There is an equal need for such analysis to be cast in an economywide perspective in order to anticipate the potential benefits and costs of structural change and adjustment. It is urged that more attention be directed towards the development of a comprehensive economywide framework or model which would improve policy advice in a way that avoids fragmented, incompatible and perhaps even contradictory approaches to the same problems

by different agencies and which enables the government to anticipate the likely effects of a particular policy action in one area, such as tariffs or investment policies, on other areas such as employment and revenue.

The resources provided to the statistical agencies, particularly the NCSO, are a key factor in the adequacy of available information. The statistical agencies, especially the NCSO, deserve every support to enable them to fill their vital role. While the costs involved in upgrading the statistical system are considerable, the investment is well justified when viewed against the potential costs of proceeding with policy options based on inadequate data which can result in unforeseen or unintended disruptions to industries and government programs.

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